



ENERGY POLICY UPDATE

APRIL 28, 2014

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email [Gloria Castro](#).

UPCOMING WEBINARS

Climate Change Impacts & Indian Country: Human Health & Community

Thursday, May 1, 10:00 a.m. - 12:00 p.m. MST.

[Click here to register.](#)

Webinar Sponsors: White House Office of Public Engagement, White House Council on Environmental Quality, and DOE's Office of Indian Energy

Behavior-Based Energy Efficiency

Thursday, May 8, 1:00 p.m. - 2:15 p.m. MST

This webinar is being hosted jointly by [SEE Action Network](#) & [ACEEE](#). [Advanced registration](#) is required. Space is limited.

Leveraging Ratepayer Programs to Cut Industrial Energy Use

Thursday, May 15, 11:00 a.m. - 12:30 p.m. MST

This webinar is being hosted by the Clean Energy Solutions Center in partnership with the Institute for Industrial Productivity & the SEE Action Network. [Advanced registration](#) is required. Space is limited. Click [here](#) to register.

The 2014 Farm Bill's Renewable Energy for

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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

[ASU Named One of Nation's Most Sustainable Colleges](#)

[ASU News, Apr. 21] Arizona State University has been named one of the nation's most sustainable colleges for the fifth consecutive year in The Princeton Review's Guide to 332 Green Colleges. The annual guidebook measures the commitment to environment and sustainability by four-year colleges across the United States.

[Downdraft All Clear in Arizona](#)

[reNews, Apr. 28] Solar Wind Energy Tower has inked an agreement with the City of San Luis in Arizona that paves the way for development of its first Downdraft Tower project. The city council unanimously approved a Development and Protected Development Rights Agreement and the wind/solar hybrid scheme is expected to be operational as early as 2018. Earlier this month SWET executed an option agreement to buy a site of more than 600 acres within San Luis. The site is convenient to highways, rail service and public utilities, as well as the electrical substation for the city, the company said. SWET chief executive Ron Pickett said: "This is the most significant event in the history of our company. This milestone allows us to advance into definitive discussions with power purchasers, potential joint venture partners and financing sources which will enable the tower to be built on time and within budget." The Downdraft Tower technology (*pictured*) harnesses the power of a downdraft created within the confines of its tower structure. Water introduced by an injection system near the top evaporates and is absorbed by hot, dry air that becomes cooler, denser and heavier than the outside air as it falls through the cylinder at speeds topping 50mph. The air is then diverted into wind tunnels surrounding the base of the tower where turbines power generators to produce electricity.

[Eon Falls In at Fort Huachuca](#)

[reNews.com, Apr. 25] Eon has broken ground at the 18MW solar PV project at the US Army's Fort Huachuca base in Arizona. The project will deliver some 25% of Fort Huachuca's energy requirement and construction is being managed by Tucson Electric Power. TEP has been the Fort's energy service provider for more than 70 years and will own and operate the facility.

[Financing the Future of Our Cities](#)


[ASU News, Apr. 24] The promise of technology-driven, "smart" cities offers a genuine opportunity to improve the livability of the world's cities, but the challenge of financing infrastructure updates can be daunting. A new report released by the [Smart Cities Council](#) and Arizona State University's [Center for Urban Innovation](#) outlines some of the most promising tools to help cities improve the


America Program

Wednesday, May 21, 3:00 p.m. - 4:00 p.m. Eastern Daylight Time.

[Learn how to join the webinar.](#)

Webinar Sponsor: Wind Program Stakeholder Engagement & Outreach Initiative

 **ENERGY STAR**
Webinars

 **U.S. Dept. of Energy**
Tribal Renewable Energy Webinar Series for 2014

efficiency of large-scale systems, such as water and transportation, to smaller projects.

"Knowledge of financial instruments and the processes to engage in sustainable financing of technologies is vital, yet few know how to navigate these complexities," says Kevin Desouza, associate dean for research in the College of Public Programs at ASU. "This guide provides practitioners, whether it be local governments or businesses, with an insight into the myriad of financial options that one can use to underwrite investments in smart technologies." "The problem is rarely the technology, which has been proven in thousands of projects around the world," said Smart Cities Council chairman Jesse Berst. "So often, the biggest barrier is how to pay for it." The findings in the guide, which outlines 28 tools for municipal financing, will be a focal point of discussion at the upcoming ASU Annual Public Finance Conference on May 8-9. Berst and Sandra Baer, director, public sector transformation and research, Smart Cities Council, will lead the opening panel discussion.

[Leased Solar Panels Are Facing Property Taxes](#)

[Arizona Republic, Apr. 26] Thousands of Arizonans who lease solar panels could start paying property taxes on those solar panels next year because of a new interpretation of state law, which solar companies are disputing. Major rooftop-solar companies such as Sunrun Inc. and SolarCity Corp. fought but failed to change the interpretation through a proposal at the Legislature. Solar leasing companies, which control the majority of new rooftop installations in Arizona, vow to fight the taxes in court if necessary to prevent their customers from paying an estimated \$152 a year in taxes for a leased residential solar array, more for those on larger buildings.

[SRP Community Solar Prices Cut](#)

[Arizona Republic, Apr. 22] Salt River Project's lower solar prices kick in next month, giving customers a cheap way to use solar power without having to install panels on their homes or businesses. The company has a large solar power plant called Copper Crossing Solar Ranch in Florence. Customers can purchase a portion of the plant's output to be credited toward their monthly bills through the Community Solar program. The municipal utility previously charged 11.25 cents per kilowatt hour of electricity from the plant for residential customers. That price drops to 9.9 cents in May. The business rate drops from 9.9 cents per kilowatt-hour to 8.9 cents per kilowatt-hour. The company's leaders voted to drop the price in December to reflect the dramatic drop in solar power in recent years and to remain competitive with deals offered by third-party installation companies that install solar.

[Tucson Electric Power's Sundt Power Plant Gets a 'Solar Boost'](#)

[ENR Southwest, Apr. 24] Tucson, AZ – Construction began this week on a pioneering hybrid solar and fossil-fuel power generation project at Tucson Electric Power Co.'s H. Wilson Sundt Generating Station. California-based Areva Solar is building the Sundt Solar Boost Project, which will use a system of focusing reflectors to concentrate sunlight on tubes to produce steam for direct use in one of Sundt's existing generating turbines. TEP says the installation at the Sundt plant on East Irvington Road, expected to be operational by October, will add up to 5 megawatts of emissions-free power generating capacity to Sundt's mainly gas-burning Unit 4 generator during peak-demand periods. The steam-boosting project is among a handful of similar installations in the world and the only one of its kind in the nation. A larger U.S. plant built by Florida Power & Light Co. in Martin County, Florida, is of a different design, using a heat-transfer fluid instead of directly generating steam and trough-style parabolic reflectors. Areva's "compact linear Fresnel reflector" technology is a system of nearly flat mirrors, arranged in louverlike arrays and motorized to track the sun, to heat up water passing overhead through a linear absorber. The Sundt project was originally planned to go into operation in early 2013, but permitting delays pushed back construction, TEP spokesman Joe Barrios said. Over the course of a year, the system will help Sundt produce enough added power for more than 600 Tucson homes, said Areva Solar, part of a leading French energy company.

ALTERNATIVE ENERGY & EFFICIENCY

[Apple Offering Free Recycling of All Used Products](#)

[Associated Press, Apr. 22] SAN FRANCISCO — Apple is offering free recycling of all its used products and vowing to power all of its stores, offices and data centers with renewable energy to reduce the pollution caused by its devices and online services. The iPhone and iPad maker is detailing its efforts to cultivate a greener Apple Inc. in an environmental section on the company's website that debuted Monday. The site highlights the ways that the Cupertino, Calif., company is increasing its reliance on alternative power sources and sending less electronic junk to landfills. Apple had already been distributing gift cards at some of its 420 worldwide stores in exchange for iPhones and iPods still in good enough condition to be resold. Now, all of the company's stores will recycle any Apple product at no charge. Gift cards won't be handed out for recycled products

deemed to have little or no resale value. The offer covers a wide array of electronics that aren't supposed to be dumped in landfills because of the toxins in them. In the past seven years alone, Apple has sold more than 1 billion iPhones, iPods, iPads and Mac computers. The new initiative, timed to coincide with today's annual celebration of Earth Day, strives to position Apple as an environmental steward amid the technological whirlwind of gadgets and Internet services that have been drawing more electricity from power plants that primarily run on natural gas and coal.

[Biggest Energy Source for the Future Isn't Oil and Gas, Exxon Says](#)

[Dallas Business Journal, Apr. 23] Hydraulic fracturing has opened a whole new world of oil and gas, but even Exxon Mobil Corp. says it's not the world's best energy source for the future. Energy efficiency technology will save 500 quadrillion British thermal units over the next 30 years, said Ted Pirog, an energy analyst with Exxon Mobil Corp. How much energy is that? "That's the amount of energy that the world uses today," said Pirog, as he spoke at the North Texas Commission luncheon Wednesday. "Our greatest source of energy in the future is our ability to use it more efficiently." Pirog gave a brief run-through of Exxon's Outlook for Energy: A View to 2040 report at the Omni Mandalay Hotel in Irving. By 2040, the world's population will grow by 2 billion people. The world will become increasingly urbanized and industrialized, relying more and more on energy. Overall energy consumption will go up 35 percent during that time but it would be far higher without advances in energy efficiencies, Pirog said. That's everything from more fuel-efficient vehicles, including hybrid cars, to more fuel-efficient power plants.

[Geothermal Booming Across 76 Countries](#)

[Fierce Energy, Apr. 22] The international geothermal power market is booming at a sustained growth rate of 4 to 5 percent, according to a new report from the Geothermal Energy Association (GEA), driven by climate change threats and grid needs. Currently, there are nearly 700 projects under development in 76 countries, according to GEA. Although growth of the international geothermal market growth was up in 2013, U.S. growth was flat because of policy barriers, gridlock at the federal level, low natural gas prices and inadequate transmission infrastructure, according to GEA. In 2013, however, 25 pieces of legislation in 13 U.S. states were enacted specifically to address geothermal power and heating systems, creating a foundation for the environment needed to foster geothermal growth in these states. Past evidence shows successful policy initiatives have translated into growth -- in Nevada, for example, the number of developing projects (45) more than doubles that of California (25), GEA notes. Additions in Utah, Nevada, California, and New Mexico kept the U.S. geothermal industry on the map in 2013, and the future looks promising.

[Navy Pushes Alternative Fuels, Citing Safety and Costs](#)

[Arizona Republic, Apr. 24] The U.S. military's increasing use of alternative fuels and electricity sources is making the nation stronger and helping drive down commercial prices for renewable energy, Navy Secretary Ray Mabus said Thursday in Tempe. Mabus, who oversees a \$170 billion annual budget and about 900,000 people, was speaking to the Arizona State University Global Institute of Sustainability at the Tempe Center for the Arts, and emphasized that renewable energy saves lives in the military. He used examples ranging from reducing the need to resupply soldiers in combat operations with batteries by providing them with solar power to massive Naval ships running on hybrid electric-fuel systems to remain at sea longer. In addition to a variety of mandates the Defense Department faces for incorporating renewable energy into its energy portfolio, Mabus set specific goals for the Navy, including getting half its energy needs from non fossil fuel sources by 2020. He said the Navy is on track to meet the goals.

[Smart Wind and Solar Power](#)

[MIT Technology Review, Apr. 24] Big data and artificial intelligence are producing ultra-accurate forecasts that will make it feasible to integrate much more renewable energy into the grid. Wind power is booming on the open plains of eastern Colorado. Travel seven miles north of the town of Limon on Highway 71 and then head east on County Road 3p, a swath of dusty gravel running alongside new power lines: within minutes you'll be surrounded by towering wind turbines in rows stretching for miles. Three large wind farms have been built in the area since 2011. A new one is going up this year. Every few seconds, almost every one of the hundreds of turbines records the wind speed and its own power output. Every five minutes they dispatch data to high-performance computers 100 miles away at the National Center for Atmospheric Research (NCAR) in Boulder. There artificial-intelligence-based software crunches the numbers, along with data from weather satellites, weather stations, and other wind farms in the state. The result: wind power forecasts of unprecedented accuracy that are making it possible for Colorado to use far more renewable energy, at lower cost, than utilities ever thought possible. The forecasts are helping power companies deal with one of the biggest challenges of wind power: its intermittency. Using small

amounts of wind power is no problem for utilities. They are accustomed to dealing with variability—after all, demand for electricity changes from season to season, even from minute to minute. However, a utility that wants to use a lot of wind power needs backup power to protect against a sudden loss of wind. These backup plants, which typically burn fossil fuels, are expensive and dirty. But with more accurate forecasts, utilities can cut the amount of power that needs to be held in reserve, minimizing their role.

[U.S. Solar Capacity Up 418% Since 2010](#)

[Solar Industry Magazine, Apr. 23] According to the U.S. Energy Information Agency (EIA), the nation's solar peak output was 2,326 MW in 2010, accounting for 0.22% of the total U.S. electric generating capacity. By February 2014, this increased 418% to 12,057 MW - a 9,731 MW gain - and now accounts for almost 1.13% of total U.S. capacity. Net-energy metering (NEM) installations have increased each year since 2010 at an annual rate of about 1,100 MW, and now total 5,251 MW, the EIA reports. California has the largest NEM solar capacity, with 38% of the total. New Jersey and Massachusetts combined represent an additional 21%. Utility-scale photovoltaic applications, which the EIA defines as 1 MW or greater, have also expanded significantly and currently account for 5,564 MW. California, with 2,702 MW, has 49% of the total utility-scale PV in the U.S. Arizona, with 960 MW, has 17%. North Carolina accounts for 340 MW - 6% of the total.

ENERGY/GENERAL

[Rich Nations' Greenhouse Gas Emissions Fall in 2012, Led By U.S.](#)

** Emissions down 1.3 pct in 2012 vs 2011 -Reuters overview*

** Industrialised nations' emissions fall 10 pct vs 1990*

** Some manufacturing emissions shifted to developing nations*

[Reuters, Apr. 2] OSLO, April 25 (Reuters) - Industrialised nations' greenhouse gas emissions fell by 1.3 percent in 2012, led by a U.S. decline to the lowest in almost two decades with a shift to natural gas from dirtier coal, official statistics show. Emissions from more than 40 nations were 10 percent below 1990 levels in 2012, according to a Reuters compilation of national data submitted to the United Nations in recent days that are the main gauge of efforts to tackle global warming. Still, with emissions rising elsewhere, experts said the rate of decline was too slow to limit average world temperature rises to 2 degrees Celsius (3.6 Fahrenheit) above pre-industrial times, a ceiling set by almost 200 nations to avert droughts, heatwaves and rising seas. In 2012 "the success story is the declining emissions in the United States," said Glen Peters, of the Center for International Climate and Environmental Research in Oslo. "Europe is a mix with slow GDP growth offset by a shift to coal in some countries." Total emissions from industrialised nations fell to 17.3 billion tonnes in 2012 from 17.5 billion in 2011 and compared with 19.2 billion in 1990, the base year for the U.N.'s climate change convention. U.S. emissions fell 3.4 percent in 2012 to 6.5 billion tonnes, the lowest since 1994, the U.S. Environmental Protection Agency said on April 15. The fall was linked to low natural gas prices, helped by a shale gas boom and a shift from coal, a mild winter and greater efficiency in transport.

[Massive Generator Makes Its Way into Mexico](#)

[Douglas Dispatch, Apr. 16] Traffic along Pan American Ave. was temporarily backed up Friday afternoon as a 300-metric ton generator made its way to the border and into Mexico. The Port of San Diego handled a key export shipment at the Tenth Avenue Marine Terminal on Saturday, April 5 when SSA Marine and local long shore workers offloaded a massive generator. The generator was then trucked across the U.S.-Mexico border for development of the Agua Prieta power plant in Sonora, Mexico. Along with the generator – which at 300 metric tons was the Port's heaviest shipment in 10 years – more than 200 wooden pallets and ancillary equipment were offloaded from the heavy lift vessel M/V Palabora. The power plant equipment was shipped by Mitsubishi Hitachi Power Systems Americas, Inc. It was loaded onto Combi Lift's M/V Palabora in Dunkerque, France. Contractors Cargo Companies transported the equipment from the Tenth Avenue Marine Terminal.

INDUSTRIES AND TECHNOLOGIES

[China's Polysilicon Makers Double in 2013 as Price Increases](#)

[Bloomberg, Apr. 23] The number of polysilicon makers in China, the world's biggest supplier of solar panels, more than doubled to 15 last year as prices climbed. The nation produced 84,000 metric tons of the raw material, used in most solar panels, in 2013, an 18.3 percent increase from a year earlier, the Ministry of Industry and Information Technology said in a statement posted on its website yesterday. At the beginning of last year, the country had seven manufacturers. The

commodity price jumped 15 percent last year, according to data compiled by Bloomberg. That prompted some Chinese polysilicon makers to restart production after suspending output as prices started to tumble in 2011, said Wang Xiaoting, a Hong Kong-based analyst from Bloomberg New Energy Finance.

[Drones Are Becoming Energy's New Roustabouts](#)

[New York Times, Apr. 21] Palo Alto, CA — The egg white [drone](#) lifted off from its ground station at a hospital construction site here, hovered for an instant, then zoomed off, sounding like a five-pound bee as it buzzed around the cranes towering over the six-acre project. Capable of carrying a high-resolution camera and other sensors, the quadcopter, a helicopter with four rotors that resembles a spaceship from a 1950s science fiction movie, was flying in a demonstration of its ability to serve a potentially lucrative new market for drones: the energy industry. [Skycatch](#), a year-old start-up based in San Francisco that has raised \$3.2 million from Google and other investors, built the drone. The company has already signed deals to test its technology with the construction giants Bechtel and DPR; First Solar, a developer of photovoltaic power plants; and SolarCity, a solar panel installer. Drones from Skycatch and more established companies are monitoring power lines, inspecting [oil](#) and gas pipelines, checking [wind turbines](#) for defects and pinpointing malfunctioning solar panels. "Drones can do just about anything the energy companies don't want to send people to do," said Michael Blades, an analyst for the research firm Frost & Sullivan, who studies the unmanned aerial vehicle, or U.A.V., industry. The Federal Aviation Administration in 2007 imposed what amounted to a nationwide no-fly zone on commercial drones in the United States while it wrote rules regulating their operation, but in March an administrative law judge for the National Transportation Safety Board [ruled](#) that the F.A.A. had no authority to impose such a ban. The F.A.A. said it expected to issue regulations for the commercial operation of small drones by the end of this year. While it is not clear what regulations will eventually emerge, a host of companies is planning to take to the skies with drones. Amazon has said it plans to deliver packages with drones, and Google just purchased Titan Aerospace, a maker of high-altitude drone satellites.

[Ice or Molten Salt, Not Batteries, To Store Energy](#)

[New York Times, Apr. 21] WASHINGTON — ENERGY storage is crucial to transforming the electric grid into a clean, sustainable, low-emissions system, the experts say. And it's happening already, just not the way most consumers would expect. The simplest idea for storage — charging up batteries at night when there is a lot of [wind energy](#) and not much demand for it, or at midday when the sun is bright — is years from being feasible, according to the experts. The reason? It costs hundreds of dollars to store a kilowatt-hour of energy in a battery, while nationally the average retail price of a kilowatt-hour is about 11 cents. On the wholesale market, even buying low at off-peak periods and selling high could earn a battery owner perhaps 25 or 30 cents for each \$400 or so invested. For that kind of transaction, "storage is not profitable," said Jay Apt, executive director of the Carnegie Mellon Electricity Industry Center. Prices would have to fall by 90 percent, from the current range of \$300 to \$500 per kilowatt-hour of capacity down to \$30 to \$50, he said. Instead, electric companies and some users of commercial power are adopting storage in forms that many people would not recognize as batteries — big containers of ice in building basements, or vast tanks of molten salt, for example. And where plain old batteries that store actual electricity are being used on the power grid, they do very subtle, high-value jobs, like keeping the alternating current system in the proper rhythm, or smoothing out the flow of energy from wind farms that are prone to start and stop suddenly. On the horizon is an exotic future of battery installations in places with plenty of conventional and renewable capacity that will need a bridge from daytime [solar power](#). California anticipates that need in a few years, when solar power wanes at sunset, but [natural gas](#) plants are unable to awake fast enough from their afternoon nap, a problem the utility industry calls "[ramping](#)." Batteries will be needed to let the natural gas system start up early and supplement electricity supplies at twilight. The storage field is so new that even executives in the energy business have trouble knowing how to think about it.

[Old World, New Tech](#)

Europe Remains Ahead of U.S. in Creating Smart Cities

[New York Times, Apr. 21] BARCELONA, Spain — The streets here offer a glimpse of what the future may have to offer. Alongside the city's world-famous architecture and pristine sandy beaches, sensors attached to trash cans now alert workers when they need to be emptied. The irrigation systems built into Barcelona's parks monitor soil moisture and turn on sprinklers when water is needed. And drivers can use a smartphone application to find the nearest available parking spot in the labyrinthine streets. "It's crucial that these new technologies are useful to our citizens," Xavier Trias, Barcelona's mayor, said in his stately offices, which date from the 15th century. "It's an important change. We have to create a sustainable system." Barcelona is among

a number of European cities adopting new forms of technology aimed at improving services. More important, the investments, including neighborhoodwide high-speed Internet connections and electricity charge points for cars and motorbikes, offer ways to cut energy use and generate income. The push mirrors efforts in cities including San Francisco and Boston, which have spent millions of dollars to upgrade their infrastructure. Other projects have appeared elsewhere, notably [Masdar City](#), a planned high-tech habitat created from scratch in Abu Dhabi. Yet analysts say Europe, despite being hard hit by the recent financial crisis — and in part because of it — remains a step ahead of the United States in creating efficient, so-called smart cities that combine traditional services like electricity networks with 21st-century technology like Internet-connected home appliances.

[Navigant: US To Remain Largest National Plug-In Vehicle Market Over Next 10 Years; Tokyo To Take Metro Market Lead Spot from LA](#)

[Green Car Congress, Apr. 24] Navigant Research [forecasts](#) that the United States will remain the largest national market for light-duty plug-in electric vehicles (PEVs) during the next 10 years, with LD PEV sales exceeding 514,000 in 2023. Currently, North America is the strongest market for light duty PEVs with nearly 100,000 sold in 2013, according to the market research firm. Japan is a distant second, with just under 30,000 sales, followed by the Netherlands (more than 23,000) and China (more than 17,000). Navigant Research forecasts that the global LD PEV market will grow at a compound annual growth rate (CAGR) of 24.6% while the global market for LD vehicles will grow at a CAGR of only 2.6% during that period. Navigant Research estimates the US PEV market will grow at a compound annual growth rate (CAGR) of 16.3% between 2014 and 2023. Canada, which is about 1 year behind the United States in terms of vehicle availability, is expected to have a CAGR of 25.4%, reaching more than 66,000 vehicles in 2023.

LEGISLATION AND REGULATION

[Cybersecurity Quickly Trumping Physical Security](#)

[Fierce Smart Grid, Apr. 23] Security is becoming an important part of the day-to-day operations of every utility across the United States, and a recent ruling by the Department of Justice (DOJ) is meant to make it easier for companies to keep their assets secure while keeping the lights on. The energy industry is a unique because most companies understand mutual assistance will benefit everyone. Keeping their utilities up and running is the number one concern, and helping each other -- even competitors -- is important to accomplishing that goal. **Information sharing** -- "Cyber threats are becoming increasingly more common, more sophisticated, and more dangerous," the DOJ's report says. "One way that private entities may defend against cyber attacks is by sharing technical cyber threat information -- such as threat signatures, indicators, and alerts -- with each other." The DOJ explained that they understand this sharing is already taking place, but the ruling was because "some private entities may... be hesitant to share cyber threat information with others, especially competitors, because they believe such sharing may raise antitrust issues." Cyber security has quickly become as important, if not more so, than physical security for the energy industry.

[DOE Releases Guidance for Strengthening Cybersecurity of the Grid's Supply Chain](#)

[Electric Light & Power, Apr. 28] The Department of Energy released new guidance to help U.S. industry strengthen energy delivery system cybersecurity. Developed through a public-private working group including federal agencies and private industry leaders, the DOE's Cybersecurity Procurement Language for Energy Delivery Systems guidance provides strategies and suggested language to help the U.S. energy

WESTERN POWER

[Genesis Shines with 100% Solar Thermal Technology](#)

[Fierce Energy, Apr. 27] NextEra Energy subsidiary NextEra Energy Resources, LLC and Pacific Gas & Electric (PG&E) are celebrating the culmination of a project seven years in the making. Development of the Genesis Solar Energy Center began in 2007. In 2010, Genesis received its license from the California Energy Commission and its right-of-way grant from the Bureau of Land Management. The project actually broke ground in January 2011. Located on approximately 1,950 acres in Riverside County, California, the solar facility, comprised of two identical 125 MW generating units, entered service in November 2013 and March 2014, respectively. The facility features more than 600,000 mirrors that capture and concentrate sunlight to heat synthetic oil, which then heats water to create steam. The steam is piped to an onsite turbine-generator to produce electricity, which is then transmitted over power lines. This solar thermal technology will provide 100 percent of the power generated by the plant without the need for supplemental fuel.

The project is helping to avoid approximately 330,000 metric tons of carbon dioxide per year or the equivalent of removing more than 68,000 passenger vehicles off the road

[Oregon Institute of Technology Recognized for Increasing Its Use of Geothermal and Solar Energy](#)

[Energy.gov, Apr. 23] Today, the Department of Energy recognized the Oregon Institute of Technology (OIT) for boosting its use of clean energy at the first campus in America to be heated by geothermal energy, achieving a major milestone toward its goal of making all seven schools in the Oregon University System carbon-neutral by 2020. Partially through Energy Department support, the Klamath Falls campus will utilize 1.5 megawatts (MW) of newly installed geothermal capacity combined with a 2 MW solar array, making OIT the first university in North America to generate most—if not all—electrical power from renewable sources. "The Department's investments at the Oregon Institute of Technology are another example of how partnerships with academia, industry, and the private sector can help cut energy waste and pollution while reducing energy bills," said Energy Secretary Ernest Moniz. "OIT's use of cutting-edge technology and its commitment to a clean energy future help diversify our energy supply while also bringing us closer to the Administration's goal of doubling renewable energy for a second time by 2020."

The school's Geo-Heat Center has been tapping its geothermal resources to heat campus buildings for nearly fifty years. Beginning in 2008, the Energy Department helped fund further development of the geothermal resources beneath the campus and supported the purchase of an initial 280 kilowatt (kW) geothermal power system. By 2010, the small binary unit was producing power for the school's facilities, and the groundwork was laid to utilize additional geothermal energy through an Energy Department investment of \$3.5 million, with a matching cost-share by the university. An additional \$1 million investment through the American Recovery and Reinvestment Act developed an innovative technology to generate electricity from low-temperature geothermal resources at an estimated 20% cost savings over conventional binary systems. Industry partner Johnson Controls, Inc., provided \$4 million in cost-share to demonstrate this novel, nearly emission-free technology at Klamath Falls, leveraging the previously funded work on the OIT campus.

[Renewable Fuels, Such As Ethanol, Put Billions into Colorado Economy, Report Says](#)

[Denver Business Journal, 25] The renewable fuel industry puts billions of dollars into Colorado's economy and supports thousands of jobs, according to a new study from The Fuels America coalition. Renewable fuels, including ethanol and biodiesel made from plants such as corn, grass or woody biomass and algae, account for nearly 10 percent of the fuel supply across the nation, according to the coalition of agribusiness groups and companies, which released the study Thursday. The coalition is battling efforts to repeal or cut the existing Renewable Fuel Standard, a federal mandate requiring ethanol and biodiesel be blended into the nation's fuel supply.

[Tesla To Open 431,000-Sq Facility in California's Central](#)

[Silicon Valley Business Journal, Apr. 23] Palo Alto-based [Tesla](#) Motors Inc. has quietly leased a 431,000-square-foot industrial facility in San Joaquin County, Calif., and is already building it out, according to city and county officials. The news, first reported [by the Manteca Bulletin this morning](#), comes as fast-growing [Tesla](#) (NASDAQ:TSLA) ramps up plans to sell 35,000 Model S sedans this year, [according to The Wall Street Journal](#). And that's just for starters. [Tesla](#) hopes to be able to produce a half-million cars a year within a decade. The [Tesla](#) deal could give heart to landlords and developers who are finally going vertical on new industrial projects in Silicon Valley. Brokers have been saying for a while that modern manufacturing and warehouse space is getting tougher to find, while requirements are growing.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

INCENTIVES

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- [Job Training](#)
- [Quality Jobs](#)

- [Qualified Facility](#)
- [Computer Data Center Program](#)
- [Research & Development](#)
- [Foreign Trade Zone](#)
- [Military Reuse Zone](#)
- [Angel Investment](#)
- [Renewable Energy Tax Incentive](#)
- [Healthy Forest](#)
- [Sales Tax Exemption for Machinery and Equipment](#)
- [Lease Excise](#)
- [Additional Depreciation](#)
- [Work Opportunity](#)
- [Commercial/Industrial Solar](#)
- [SBIR/STTR](#)
- [Private Activity Bonds](#)
- [QECB's](#)

(ACA) PROGRAMS

DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)

- [Arizona Incentives/Policies](#)
- [Federal Incentives/Policies](#)
- [Solar Policy News](#) - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

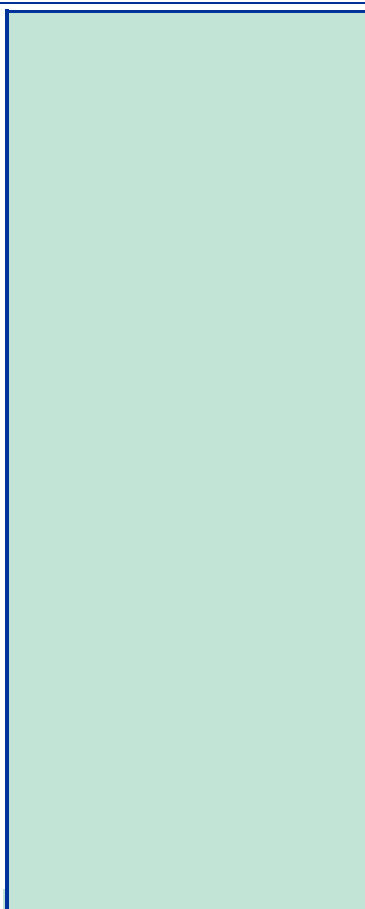










- [Integrated Enhanced Geothermal Systems \(EGS\) Research and Development](#) Close Date: April 30, 2014
- [Low Temperature Geothermal Mineral Recovery Program](#) Close Date: May 2, 2014
- [Commercial Building Technology Demonstrations](#) Concept Paper Submission Deadline: March 31, 2014. Full Application Submission Deadline: May 19, 2014.
- [Bioenergy Technologies Incubator](#) Close Date: May 23, 2014
- [Clean Energy Manufacturing Innovation Institute for Composite Materials & Structures](#) Close Date: June 19, 2014
- [Sunshot "Race to the Roof" Initiative](#) Registration Due: October 31, 2014
- [Energy, Power, and Adaptive Systems](#) Close Date: November 3, 2014
- [Energy for Sustainability](#) Response Due: February 19, 2015
- [Advanced Fossil Energy Projects - Solicitation Number: DE-SOL-0006303](#) Expiration Date: November 30, 2016
- [NSF/DOE Partnership on Advanced Frontiers in Renewable Hydrogen Fuel Production Via Solar Water Splitting Technologies 2014-2016](#) Close Date: Dec. 11, 2014

- [Energy Department Announces Next Phase of L Prize Competition to Create Innovative Energy-Saving Lighting Products](#) – Notification of Intent to Submit Product minimum of 30 days, but no more than 45 days prior to product submission. Monetary prize goes to the first successful entrant with the earliest timestamp.
- [Repowering Assistance Program](#) – Ongoing
- [Rural Business Enterprise Grants](#) – Ongoing
- [Rural Business Opportunity Grants](#) – Ongoing
- [Sustainable Agriculture Research and Education Grants](#) – Ongoing
- [Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power](#) – Various Deadlines
- [U.S. Dept. of Agriculture - Rural Development Grant Assistance](#)
- [Green Refinance Plus](#) - Ongoing

ENERGY-RELATED EVENTS

2014

- ✚ [VerdeXchange Arizona](#)
April 30-May 2, 2014 Phoenix, AZ
- ✚ [ASU School of Sustainability Open House & Student Project Showcase](#)
May 1, 2014 ASU Wrigley Hall – Tempe, AZ
- ✚ [Windpower 2014](#)
May 5-8, 2015 Las Vegas, NV
- ✚ [Cybersecurity Summit](#)
May 7, 2014 Scottsdale, AZ
- ✚ [AWEA Windpower 2014](#)
May 5-8, 2014 Las Vegas, NV
- ✚ [AZ Water Association Annual Conference & Exhibition](#)
May 7-9, 2014 Glendale, Arizona.
- ✚ [Beyond the Border: Arizona Trade Mission to Mexico City & Guadalajara](#)
May 12-16, 2014
- ✚ [Sunshot Grand Challenge Summit 2014](#)
May 19-22, 2014 Anaheim, CA
- ✚ [Dept. of Energy's 13th Annual Small Business Forum & Expo](#)
June 10-12, 2014 Tampa, FL
- ✚ [Native American Economic Development & Energy Projects Conference](#)
June 16-17, 2014 Anaheim, CA
- ✚ [AZBio Expo 2014](#)
June 19, 2014 Scottsdale, AZ
- ✚ [32nd Annual West Coast Energy Management Congress](#)
June 25-26, 2014 Seattle, WA
- ✚ [Solar 2014: 43rd Annual Conference](#)
July 6-10, 2014 San Francisco, CA

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-  [National Geothermal Summit](#)
August 5-6, 2014 Reno, NV
 -  [2014 ACEEE Summer Study on Energy Efficiency in Buildings](#)
August 17-22, 2014 Pacific Grove, CA
 -  [EPI's 4th Annual Energy Policy Research Conference](#)
September 4-5, 2014 San Francisco, CA
 -  [HTUF 2014 National Meeting - The Forum for Action in High-Efficiency Commercial Vehicles](#)
September 22-24, 2014 Argonne, National Lab Argonne, IL
 -  [Geothermal Energy Expo](#)
September 28-October 1, 2014 Portland, OR
 -  [Solar Power International](#)
Oct. 20-23, 2014 Las Vegas, NV
 -  [GreenBuild International Conference & Expo](#)
October 22-24, 2014 New Orleans, LA
 -  [Governor's Celebration of Innovation](#)
November 13, 2014
 -  [ASU Sustainability Series Events](#)
 -  [Green Building Lecture Series](#)
Granite Reef Senior Center Scottsdale, AZ